

CLAIMS

1. (Presently Amended) A ~~solidified molten homogeneous mixture; the molten mixture containing phosphorous acid and at least one other NPK nutrient, metal microelements, and a base selected from potassium carbonate and potassium hydroxide in an amount to at least partially neutralize said acid, at a temperature of from 60°C to 130°C; cooled and broken to water-soluble, granular, free-flowing agrochemical composition, not leaving harmful or useless deposits in the soil, of uniform particle size containing from 0% to 1% water~~ solid, granular, free-flowing, water-soluble agrochemical composition, which does not leave harmful or useless deposit in the soil, said granular composition containing the following components:

a) phosphorous acid (H_3PO_3);

b) at least one other NPK nutrient;

c) metal microelements; and

d) a base selected from potassium carbonate and potassium hydroxide;

said granular agrochemical composition being manufactured according to a process comprising a step wherein components b), c) and d) are mixed into molten component a) and homogenized at a temperature of 60°C to 100°C, thereby conferring to said granular composition a low hygroscopicity as

expressed by a critical relative humidity (CRH) of between 50 and 65%, and a water content of between 0 and 1%.

2. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, wherein said nutrient is selected from the group consisting of monoammonium phosphate, monopotassium phosphate, dipotassium phosphate, potassium chloride, ammonium chloride, potassium sulfate, ammonium sulfate, and urea.
3. (Canceled)
4. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, wherein said metal microelements are selected from the group consisting of zinc, copper, iron, manganese, molybdenum, and boron.
5. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, wherein said metal microelements are present as any commercially available salt.
6. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, wherein said metal microelements are present in the form selected from the group consisting of chloride, sulfate, molybdate, ethylenediaminetetraacetate, and borate.
7. (Canceled)
8. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, additionally containing one or more additives that further enhance its fertilizing and pesticidal properties.

9. (Presently Amended) A ~~solidified mixture~~ composition according to claim 8, wherein the additive is chosen from the group consisting of stimulant, pesticide, and surfactant.
10. (Presently Amended) A ~~solidified mixture~~ composition according to claim 8, wherein the additive is humic acid.
11. (Canceled)
12. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, additionally containing one or more additives that modify functional or aesthetic properties of the particles.
13. (Presently Amended) A ~~solidified mixture~~ composition according to claim 12, wherein the additive is chosen from the group consisting of surfactant and dye.
14. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, wherein said NPK nutrient comprises monoammonium phosphate or monopotassium phosphate.
15. (Presently Amended) A ~~solidified mixture of~~ composition according to claim 1, which contains from 10 to 95 wt% salts of phosphorous acid.
16. (Presently Amended) A ~~solidified mixture~~ composition according to claim 15, which contains from 5 to 90 wt% of NPK nutrients other than salts of phosphorous acid, and from 0.005 to 2 wt% metal microelements.

17. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, which is completely dissolved when mixed with water at ambient temperatures, in the ratio of 10 parts of the solid to 90 parts of water.
18. (Presently Amended) A ~~solidified mixture~~ composition according to claim 17, which is completely dissolved when mixed with water at ambient temperature, in the ratio 20 parts of the solid to 80 parts of water.
19. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, which provides a solution having pH 3.4-7.0, when dissolved 1 part in 100 parts of water.
20. (Canceled)
21. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, which contains from 0.1 to 0.4 wt% water.
22. (Canceled)
23. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, which contains from 15 to 35 wt% salts of phosphorous acid.
24. (Presently Amended) A ~~solidified mixture~~ composition according to claim 24, which contains from 65 to 85 wt% of NPK nutrients other than salts of phosphorous acid, and from 0.05 to 0.5 wt% metal microelements.
25. (Canceled)

26. (Presently Amended) A ~~solidified mixture~~ composition according to claim 1, which provides a solution having pH 3.8-5.3, when dissolved 1 part in 100 parts of water.

27. (Canceled)

28. (Withdrawn) A process for the manufacture of an agrochemical composition, said process comprising i) blending and heating at a temperature from 60.degree. C. to 130.degree. C. a mixture containing phosphorous acid, at least one other NPK nutrient, metal microelements and other additives; ii) introducing a base into the mixture, thus at least partially neutralizing phosphorous acid, wherein the amount of the base is sufficient to provide that the pH of a 1% water solution of the final composition will be between 3.4 and 7.0; iii) homogenizing the mixture, while optionally lowering the pressure above the mixture; iv) and cooling the mixture, while obtaining a homogeneous, granular, free flowing and not caking material, containing from 0% to 1% water.

29. (Withdrawn) A process according to claim 28, wherein the molten mixture is neutralized by a base of formula MR, wherein M is selected from potassium and ammonium, and R is selected from carbonate and hydroxide.

30. (Withdrawn) A process according to claim 28, wherein the molten mixture is neutralized by potassium carbonate or potassium hydroxide.

31. (Withdrawn) A process according to claim 28, wherein the components may be added

to the mixture in any order.

32. (Withdrawn) A process according to claim 28, wherein the components may be preheated in any order before forming the complete mixture.

33. (Withdrawn) A process according to claim 28, wherein the complete mixture has a temperature between 60⁰ C and 130⁰ C.

34. (Withdrawn) A process according to claim 28, said process further comprising a molten mixture.

35. (Withdrawn) A process according to claim 28, wherein the complete mixture is heated to a temperature between 61.degree. C. and 100.degree. C.

36. (Withdrawn) A process according to claim 28, said process yielding a granular composition homogeneous in chemical composition and uniform in particle-size.

37. (Withdrawn) A process according to claim 28, said process yielding a granular, free flowing composition that contains from 0.1% to 0.4% water.

38. (Withdrawn) A process according to claim 28, said process yielding a granular composition having hygroscopicity, as expressed by the critical relative humidity, from 50% to 65%.

39. (Withdrawn) A process according to claim 28, wherein the pressure is lowered below 70 mm Hg.

40. (Canceled)